



April 20, 2005
AET 05-0017

Mr. Jack R. Strosnider
Director, Office of Nuclear Material Safety and Safeguards
Attention: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

**American Centrifuge Plant
Docket Number 70-7004
Additional Responses to the Request for Additional Information for the Environmental Report
(TAC No. L32307)**

Dear Mr. Strosnider:

Pursuant to Reference 1, USEC Inc. (USEC) hereby submits to the U.S. Nuclear Regulatory Commission (NRC) additional responses related to the Request for Additional Information (RAI) on the Environmental Report for the American Centrifuge Plant.

Enclosure 1 of this letter provides the additional responses as noted in Enclosure 1 of Reference 1. The changed pages associated with these RAI responses will be submitted under separate cover (AET 05-0023).

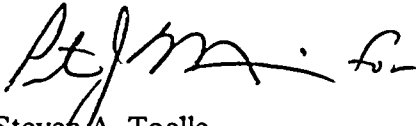
Enclosure 1 has been reviewed in accordance with the December 21, 2004 NRC Review Criteria to Identify Sensitive Information in Fuel Cycle Documents and the appropriate pages are being submitted under separate cover (AET 05-0018).

Umsso1

Mr. Jack R. Strosnider
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If there are any questions regarding this matter, please contact, Mr. Peter J. Miner, at (301) 564-3470.

Sincerely,

A handwritten signature in black ink, appearing to read 'St. Toelle', with a stylized flourish at the end.

Steven A. Toelle
Director, Nuclear Regulatory Affairs

cc: M. Blevins, NRC HQ
J. Davis, NRC HQ
Y. Faraz, NRC HQ
B. Smith, NRC HQ

Enclosures: As Stated

Reference

1. USEC Letter (AET 05-0010) from S. Toelle (USEC) to J. Strosnider (NRC), "Responses to Request for Additional Information on the Environmental Report (TAC No. L32307)," dated March 25, 2005.

Enclosure 1 to AET 05-0017

**Additional Responses to Request for Additional Information
for the Environmental Report**

Enclosure 1 of AET 05-0017
Additional Responses to the Request for Additional Information for the
Environmental Report

3-5 Historic and Cultural Resources

- A. With respect to page 3-63 in Section 3.8.2 of the ER, clarify which existing buildings are contributing resources to the historic property.
- The description presented on page 3-63 indicates that some buildings are contributing and that some buildings are not contributing resources to the historic setting, but does not provide any additional detail necessary to assess the impacts on the buildings that contribute to the historic setting.

USEC Response

The U.S. Department of Energy (DOE) reservation is considered eligible for inclusion in the National Register of Historic Places by the State Historic Preservation Office (SHPO), although contributing and non-contributing resources have not been determined by the office.

In correspondence from the Ohio Historic Preservation Office (OHPO) regarding the proposed modification of the existing gas centrifuge enrichment plant (GCEP) facilities to construct a new centrifuge plant, the OHPO stated, "One of the features giving significance to DOE reservation is the large scale operation comprising the gaseous diffusion plant. Based on the information provided in the correspondence, it does not appear that the buildings to be modified contain equipment that formed an integral part of the gaseous diffusion operation. It appears that the buildings to be modified are of somewhat different style, function, and scale than the main buildings that make up the core of the Portsmouth Gaseous Diffusion Plant property." From this statement, it appears that OHPO's primary objective is the protection of the core gaseous diffusion plant building and equipment. Thus it is currently the position of the OHPO that the existing buildings at the DOE reservation will be affected by the ACP (primarily the GCEP facilities) do not appear to constitute a contributing resource.

Reference documents Coleman et. al. 1997, Schweikart et. al. 1997, DOE 2001a, and DOE 2001b (requested from the DOE) were transmitted from J.T. Howell (DOE) to T. Wertz (USEC) on April 14, 2005. These documents will be provided to the U.S. Nuclear Regulatory Commission (NRC) under separate cover (AET 05-0027).

This clarification has been added into the Environmental Report.

Information Contained Within
Does Not Contain
Export Controlled Information

R.L. Coriell 04/18/05

4-1 Transportation Impacts:

- A. Analyze and provide a complete summary of all the radiological and environmental impacts of transportation accidents for the proposed action based on NUREG-0170 and the specific volumes and origins and destinations described in Section 4.2.3.2.1 of the ER. Also provide the TRAGIS node names and node numbers used in the analysis.
- Page 4-29 of the ER states that as long as nuclear materials are shipped in conformance with NRC and Department of Transportation regulations and in containers that meet those agency's requirements, then the radiological and environmental impacts of accidents do not need to be evaluated as these were addressed in NUREG-0170. The relevant information and analyses from NUREG-0170 and other appropriate documents need to be brought forward, combined with the project specific shipment information, and the resulting analysis presented so that the reader can see what the radiological and non-radiological accident impacts are.
- B. Describe in detail and clarify the scaling process that was used to apply the results from ANL/EAD/TM-112 to the proposed ACP shipments to a range of destinations, as mentioned on page 4-34 of the ER.
- Page 4-34 of the ER simply states that this was done, but provides no details. As such, it is not possible to determine if the assumptions made are reasonable and appropriate.
- C. Provide a summary of the analysis based on ANL/EAD/TM-112 and justify how shipments from East Tennessee can be leveraged for use nationwide.
- On page 4-5, the ER states that ANL/EAD/TM-112 bounds the shipment of DUF₆ and non-DUF₆ cylinders. ANL/EAD/TM-112 states that its analyses can be incorporated in future EISs, but this has not been explicitly done in the ER. Given this statement in the original document, one would expect to see the ER take advantage of the past analyses by presenting parts of the past analyses and combining them with the project-specific information on numbers of trips, distances, routes, etc. to present a simplified analysis applicable to the present proposal.
- D. Clarify and summarize all methodologies applied and inputs used to assess transportation impacts.
- Throughout Section 4.2 of the ER, reference is made to methodologies from other documents, but information is not presented in a sufficiently detailed or consistent way to allow a reviewer to understand and accept the ER's conclusions. For example:

- 1.) The basic accident rates and emission factors are listed in some instances, but not all;
- 2.) Route information is not provided;
- 3.) Pages 4-5 to 4-6, section 4.2.3.1, describe the sources of various inputs, but does not include any discussion on the suitability of the values selected;
- 4.) Page 4-34, section 4.2.3.2.1.7, refers to DOE 2001, the 2000 census, and TRAGIS model runs, but no data are provided; and
- 5.) Page 4-36 refers to ANL/EAD/TM-112 and the scaling of its results, but the scaling assumptions are not provided.

E. Provide all of the basic information for the equipment and material tables in Section 4.2 in a consistent format, using the table below as a guideline for the minimum parameters that are needed. Include all waste shipments, including shipments of used centrifuges, in this table.

Item or material	Number of truckloads per year (if they vary by year, give appropriate estimates for each year)	Years in which trips are made (during construction, during operations, etc.)	Distance in miles (Give basis for distance selected, e.g., from TRAGIS, distance to selected source, distance to likely source)	Is mileage one-way or two-way? (describe basis for selection)	Weight per shipment or type of truck that will be used (Feeds into air analyses, and for hazardous materials, the design of the trucks influences the chance of a release)	Route information and source (this might be origin and destination; TRAGIS run; local or typical sourcing locations; etc.

- The tables in Section 4.2 vary in detail and the presence of specific information. Some provide miles, some provide number of shipments, and others list points of origin. Missing data can sometimes be determined from the list of assumptions, but not always. For the electrical equipment, feed and withdrawal equipment, and the machine plant, mileages are not provided. In addition, the basis for one-way versus two-way trips is not clear and waste transportation is not fully characterized. For example, used centrifuges are not discussed as a waste stream in the ER.

- F. Provide the same information on hazardous materials (e.g., hydrofluoric acid) shipments, using a table similar to that provided above.
- The risks and environmental impacts of transporting non-radiological hazardous materials are not analyzed in the ER.

USEC Responses

Section 4.2 of the Environmental Report has been extensively revised to clarify information and data requested for evaluation of environmental impacts of transportation activities.

4-3 Water Resources Impacts

- A. With respect to Table 4.4.3-2 on page 4-54 of the ER, confirm that the projected withdrawal rate for water supply wells at the 7 million SWU operating capacity is within permitted levels and provide a map that shows the location of domestic, residential, or irrigation supply wells that tap the Scioto River aquifer.
- While the referenced table shows that projected ACP potable and makeup water use is expected to increase current water consumption by 3.2 percent, it is unclear if any additional groundwater withdrawals needed for this additional consumption could impact other supplies in the area. A map showing the locations of wells in the Scioto River aquifer and comparison of projected withdrawals to currently permitted levels would allow the DEIS to address this question.

USEC Response

As cited in Table 4.4.3-2 of the Environmental Report, the DOE Reservation is permitted at 100 percent of the design capacity of the water supply system (20 MGD). As shown in Table 4.4.3-2, the peak water demand for the proposed action is only 3.2 percent of the permitted plant water supply, well within the permitted level. Based on current and existing activities, the non-centrifuge use of water is unlikely to significantly increase from the present use shown in the table at any point in the foreseeable future and will remain well below historical usage levels (in excess of 10 MGD). Historical groundwater withdrawals have not caused any identified problems with other wells in the Scioto River aquifer.

After consultation with the Ohio Department of Natural Resources (ODNR), which maintains records of water wells in the State of Ohio, USEC has been informed that the ODNR does not maintain well location data in the form of maps. Consequently, no map of domestic, residential, or irrigation supply wells tapping the Scioto River aquifer exists.

No change to the Environmental Report is necessary.

4-5 Air Quality Impacts:

- A. Specify the units used to report the typical emission rates in Table 4.6.3.2-1 on page 4-77 of the ER and review the data to ensure that the sum of the rows and columns is equal, within round-off errors, to the totals reported in the table.
- No units are provided for the numbers given in Table 4.6.3.2-1. Additionally, the sum of the ^{234}U emission rates is 7.04×10^{-2} , significantly less than the 1.27×10^{-1} reported in the table.

USEC Response

Section 4.6.3.2, third paragraph of the Operations subsection and Table 4.6.3.2-1 of the Environmental Report has been revised to address this concern.

- B. With respect to page 4-78 within Section 4.6.3.2 (Radiological Air Quality) of the ER, provide one or more maps showing the location of:
 - 1.) All airborne sources of radiological emissions associated with the ACP.
 - 2.) All cylinder storage yards associated with the ACP (along with the type and quantity of material to be stored in each yard, both short- and long-term).
 - 3.) Primary onsite roads for transporting radiological materials into and out of the ACP.
 - 4.) All onsite tenants (along with the approximate number of people working in each building or area).
 - 5.) All buildings or areas where there are onsite non-radiological (i.e., non-badged) workers (along with the approximate number of people working in each building or area).
 - 6.) The current actual offsite residences nearest to the DOE Reservation boundary in each compass direction.
- These locations and other details are not provided in the ER, but are needed for the dose modeling to be included in the DEIS. The requested map(s) would be for internal use in preparing the DEIS, and would not need to be provided in a form suitable for publication in the DEIS (i.e., do not need to be purged of proprietary or secure information).

USEC Response

USEC Letter AET 05-0013, dated 04/15/05, provided maps to the NRC. Those maps included:

- B(1) 4-5-B-1 ACP Monitored Vents;
- B(2) 4-5-B-2 ACP Cylinder Storage Yards;

- B(3) 4-5-B-3 On-site Roads;
- B(4) 4-5-B-4 On-site Tenants;
- B(5) 4-5-B-5 Non-Radiological Facilities; and
- B(6) 4-5-B-6 Nearest Off-site Residences.

No change to the Environmental Report is necessary.

- C. Provide the total square footage of land to be excavated for the new roads and new parking areas listed in Table 4.3.3-1 on page 4-43.
 - Although the ER provides the square footage of new building footprints, the area to be excavated for new roads and parking areas is not provided. This additional area is needed to evaluate the air quality impacts of the proposed new construction.

USEC Response

It is anticipated that approximately 108,000 ft² of roads and parking areas will be constructed to support a 7 million SWU facility.

Text has been added to the Sections 4.3.3, 4.6.3, and 4.10.1.3 of the Environmental Report to address this question.

- D. With respect to the manufacturing discussion on page 4-74 in Section 4.6.3.1 (Non-Radiological Air Quality), provide estimates of the quantities and concentrations of non-radiological contaminants expected to be emitted to the air from the proposed centrifuge manufacturing operations.
 - Page 4-74 and Appendix E of the ER identify chemicals that may be used in the manufacturing operations and emitted to the air, but there is not sufficient information to support an analysis of potential air quality and public health impacts.

USEC Response

Common chemicals that may be released to the environment due to centrifuge manufacturing include acetone, alcohols, carbon dioxide, ethanol, Freon 134, resin products, solvent vapors, and n-methyl pyrrolidone (NMP). Detailed design of the manufacturing process is not complete at this time; therefore potential emission rates are not available. However, emissions will be maintained at or below levels acceptable to the Ohio Environmental Protection Agency or other applicable state regulatory agency as having no significant environmental impact.

Text has been added to Section 4.6.3.1 of the Environmental Report for clarification.

- E. With respect to the operations discussion on page 4-75 in Section 4.6.3.1 (Non-Radiological Air Quality), provide information on how many diesel generators may be used in a given year for the proposed action at the 7 million SWU operating level.
- While page 4-75 states that the diesel generators are expected to operate below the Ohio permitting threshold, the total number of generators that may be on hand and used in a given year is needed to support modeling of potential air quality impacts for the DEIS.

USEC Response

Response contains USEC Proprietary Information and is being transmitted under separate cover (AET 05-0018).

- F. With respect to the operations discussion on page 4-75 in Section 4.6.3.1 (Non-Radiological Air Quality), provide the number of tons of coal that would be used annually under the proposed action at the 7 million SWU operating level.
- While Section 4.6.1 on page 4-67 reports that 60,000 tons of coal would be used annually under the no-action alternative, no information is provided on how coal consumption would increase under the proposed action.

USEC Response

The X-600 Steam Plant will not be utilized to support the ACP. Coal will not be used for the proposed action.

No change to the Environmental Report is necessary.

- G. For the aboveground storage tanks (ASTs) listed in Table 4.4.3-3 on page 4-55, provide information on whether the tanks are going to be vertical or horizontal fixed roof tanks or floating roof tanks.
- These details are not provided in the ER, but are needed to support the analysis of potential non-radiological air quality impacts associated with the ASTs.

USEC Response

Response contains USEC Proprietary Information and is being transmitted under separate cover (AET 05-0018).

- H. With respect to the discussion of the Product and Tails Withdrawal Building Operations, provide the expected concentration of hydrogen fluoride (HF) in the workspace atmosphere from cylinder connections and disconnections.
- The formation of UO_2F_2 mentioned on page 4-83 should be accompanied by the formation of HF. The expected HF concentrations are not provided in the ER, but are needed to support the analysis of potential non-radiological air quality impacts associated with these operations.

USEC Response

Airborne HF and UO_2F_2 concentrations are expected to be insignificant except in the immediate area between the release source and the gulper and to be low even in that area. Experience at the gaseous diffusion plants with connection/disconnection releases indicates that such releases involve much less than a gram of UF_6 and that an operating gulper system will remove both the UO_2F_2 and HF from the workspace almost immediately. (One gram of UF_6 will generate 0.88 g of UO_2F_2 and 0.215 grams of HF as it reacts with ambient moisture.)

Section 4.6.3.2.1, subsection Product and Tails Withdrawal Buildings, of the Environmental Report has been revised to clarify.

4-8 Socioeconomic Impacts

- A. Provide documentation of the input-output (RIMS-II) modeling assumptions, calculations, and multipliers referenced on page 4-92 of the ER.
- Socioeconomic impacts were estimated using RIMS-II multipliers developed by the Bureau of Economic Analysis (BEA). Section 4.10.1 describes the socioeconomic impact methodology used. However, documentation clarifying assumptions, calculations, and multipliers were not provided.
- B. With respect to page 4-96 of the ER, provide the estimated number of jobs created during each of the following unique phases of the proposed action. Provide details on whether these positions are full- or part-time, as well as the timeline in which the jobs will be active.
 - 1.) Refurbishment, site preparation, and construction
 - 2.) Manufacture of gas centrifuges and components

- 3.) Facility operation
 - 4.) Decontamination and decommissioning
- Section 4.10.1.3 of the ER describes the employment impact of two phases: (1) Refurbishment and Construction, and (2) Operations. However, the DEIS will examine potential impacts for the four phases above.
- C. If there are any updates to the estimated number of jobs in response to 4-8B above, provide revised estimates of the secondary employment impact of the proposed action that reflect any changes in total direct employment based on all four project phases listed in 4-8B.
- Page 4-96 in Section 4.10.1.3 of the ER describes the number of direct jobs created during the construction and operation phases of the proposed action. If the estimated number of jobs is revised in response to 4-8B, corresponding revised estimates of secondary employment impact are needed for each project phase.
- D. With respect to page 4-96, provide a reference for the cited percentage of new jobs that would be filled from outside the ROI for each unique phase (as listed in 4-8B) of the proposed action.
- Section 4.10.1.3 describes the anticipated increase in construction contractor jobs during both the refurbishment and construction phases of the proposed action. It states that one quarter of the 1,036 new jobs would be filled from outside the ROI. However, no reference or rationale for that estimate is provided.

USEC Response

Section 4.10 of the Environmental Report has been revised to include a new sub-section entitled "Socioeconomic Impact Methodology." This new sub-section outlines the use of BEA RIMS II information. Subsequent sections of 4.10 are being renumbered and revised to include updated information requested in NRC Question 4-8 A through D.

- E. Provide details about the capacity of the Pike Sanitation Landfill and which communities/municipalities depend on it for waste disposal. Provide details on alternative landfills in the area available for use by ROI communities.
- Section 4.2.3.2.3.1 (page 4-38) of the ER lists the Pike Sanitation Landfill as a destination for solid waste generated by the proposed action and specifies the projected tonnage to be disposed at the landfill. Information on the overall capacity of the landfill is needed to estimate whether use of the

landfill by the proposed action will affect community waste disposal resources.

USEC Response

The Pike County Landfill will be the primary endpoint for sanitary/industrial waste disposal and the Rumpke Beach Hollow Landfill is an alternative. The projected capacities and use of each are as follows:

Capacity	Space	Municipalities Using Landfill
Rumpke Beach Hollow Landfill		
264 tons/day	82 more years	Jackson, Wellston, and Oak Hill
Pike County Landfill		
2,000 tons/day	34 more years	Jackson, Scioto, Pike, Lawrence, Adams, Brown, Highland, and Ross

No change to the Environmental Report is necessary.

- F. If utilities (electric power, natural gas, sanitary water, wastewater treatment, municipal waste disposal) will be procured from off-site providers for any phase of the proposed action, provide details on how the increased demand (if any) from the proposed action will affect the availability and cost of utilities to communities in the ROI.
- Section 8.2 (page 8-1) of the ER states that "Impacts to utility usage for the ACP were analyzed for electricity, water, and sewer. Based on existing excess capacities and the increase in utilization, the impact to the utility usage would increase, but would be well within design and historical capacities for the various utilities." The ER does not clarify whether these utilities include off-site utilities. The ER also provides no assessment of the impact of off-site utility procurement (if any) to the availability and cost of utilities to communities in the ROI.

USEC Response

Utilities will continue to be procured through existing resources. With the exception of natural gas for the X-6002 boiler system, both the on-site and off-site utilities were constructed in the 1950s for the express purpose of supporting the Portsmouth GDP. The communities in the Region of Influence (ROI) have never had access to these utilities. Furthermore, these utilities were designed to support and for fifty years have supported the operation of the Portsmouth GDP, which consumed far more resources than the proposed action will as described in Chapter 4.0 of the Environmental Report. Historically, the GDP has had no visible impact on availability or cost of these utilities to

the ROI and it is unlikely the proposed action will either. In regard to natural gas usage, the proposed action will not require any more natural gas than can be supplied through the existing two-inch diameter supply line. The proposed action will have no impact on off-site availability or cost of natural gas.

Section 8.2 of the Environmental Report has been revised to incorporate changes.

4-10 Waste Management Impacts

- A. Provide information on the types and quantities of LLRW and RCRA wastes that are expected to be generated from cleanup and refurbishment activities needed prior to turning over existing facilities from DOE to USEC to begin ACP upgrade activities. This should include information on any wastes from DOE's accelerated cleanup of the Gas Centrifuge Enrichment Plant (GCEP) facilities to be used by USEC for the ACP.
- Page 4-115 in Section 4.13.3.1 of the ER notes that LLRW and RCRA wastes could be generated during the refurbishment phase, but Table 4.13.3.3-1 on page 4-125 and Table 4.2.3.2-2 on page 4-33 do not appear to account for such wastes.

USEC Response

The projected amount of waste anticipated to be generated during the refurbishment phase is as follows:

GCEP Clean-up Wastes:

LLRW	275,000 – 300,000 ft ³
RCRA	50 – 100 ft ³
Recyclables	5,000 – 6,000 ft ³

Refurbishment Wastes:

LLRW	200 – 500 ft ³
RCRA	50 – 500 ft ³
Recyclables	100 – 500 ft ³

Table 4.13.3.3-1 of the Environmental Report has been revised to include this information. Table 4.2.3.2-2 of the Environmental Report has been revised in response to NRC Question 4-1 and is now labeled as Table 4.2.3.2-18.

- B. Clarify if wastes from centrifuge failures, lubricants, and other vacuum system components and wastes from start-up testing activities are included in Table 4.2.3.2-2 on page 4-33 and Table 4.13.3.3-1 on page 4-125. If so, explain where these wastes are accounted for in the tables. If not, revise the tables to account for these wastes.
- Given the categories of wastes defined in the above-referenced tables, it is unclear if wastes from centrifuge failures, lubricants, and other vacuum system components and wastes from start-up testing activities are included.

USEC Response

Waste from centrifuge failures, lubricants, and other vacuum system components and start-up and testing activities are included in the Activity Phase column listed as Manufacturing/Assembly. Included in the Manufacturing/Assembly category are the solvent rags (RCRA), which will be used in assembly work, general maintenance (Non-regulated Sanitary/Industrial) materials, including the packing material generated during receipt of equipment.

Tables 4.2.3.2-2 (now Table 4.2.3.2-18) and 4.13.3.3-1 of the Environmental Report were revised to clarify waste categories and quantities.

- C. Specify the practices for the onsite management of LLRW and LLMW associated with the proposed action, including the location and design of onsite management facilities and the length of time the waste will be stored onsite prior to shipment offsite.
- While page 4-120 of the ER states that these wastes will be managed onsite in accordance with applicable requirements, this description does not provide enough detail to allow the DEIS to describe and assess the radiation doses associated with these onsite waste management activities.

USEC Response

Storage of Low Level Radioactive Waste (LLRW) and Low Level Mixed Waste (LLMW) will be managed in the XT-847 Waste Management Staging Facility.

The following information is currently in Section 4.13.3 of the Environmental Report, which describes the facility utilized for waste operations:

The majority of wastes generated by the ACP operations will be managed for USEC at the XT-847 facility located near the southern end of the DOE reservation. The facility is a steel structure with concrete floors and is divided into three major staging areas. The northern and southern sections are separated from the center section of the building by concrete block

four-hour rated firewalls and steel fire doors. An administrative area adjoins the staging area. A RCRA 90-day storage area is also located within the building.

The XT-847 facility is used to accumulate and stage/prepare hazardous, hazardous radioactive mixed waste, low level radioactive waste, and non-hazardous recyclable materials prior to shipment off-reservation. The building is equipped with truck and rail loading/unloading facilities and scales. The XT-847 facility supports nuclear measuring activities. This includes a glove box with associated ventilation and containment housing, box monitor, NDA, LDWAM laboratory and office.

The following text has been added to Section 4.13.3.4 for clarity, "Shipments of LLMW will occur approximately every 90 days. LLMW that contains enough grams of ^{235}U to impact the TSDF's permit gram limit acceptance criteria would be scheduled with the TSDF facility and would be shipped, as the TSDF NRC License gram limit would allow. The waste would remain on-site and managed in accordance with LLMW rules in OAC 3745-266 until shipments could be scheduled to the TSDF."

- D. Provide information on the quantity, form, and isotopic content of all LLRW and LLMW – other than depleted uranium wastes – to be managed onsite at Piketon as result of the proposed action.
- The general information on mixed and radioactive waste provided on page 4-119 of the ER is not specific enough to support dose modeling. In order to model dose by isotope, data on expected activities for each isotope are needed, not ug/g of total uranium. In addition, the information on page 4-119 provides a wide range of concentrations and indicates that even higher concentrations do occasionally occur. Given this very uncertain information, it is not clear what to assume for dose modeling.

USEC Response

Based on the isotopic distribution for uranium enriched to 2.5 percent in the Portsmouth Gaseous Diffusion Plant cascade the approximate uranium isotope weight distribution would be ^{238}U (.975), ^{236}U (<.00001), ^{235}U (.025), and ^{234}U (.0002). Section 4.13.3.4 of the Environmental Report has been revised to clarify.

- E. Clarify what the "non-regulated" waste streams are in Table 4.2.3.2-2 on page 4-33 and Table 4.13.3.3-1 on page 4-125.
- It is unclear what "non-regulated classified" wastes and "non-regulated general maintenance and maintenance materials" are in relation to the other types of wastes listed in both tables.

USEC Response

A Non-Regulated Waste is any discarded material that is excluded under the Ohio Administrative Code - OAC 3745-51-04, does not exhibit a characteristic of a hazardous waste under OAC 3745-51-20 to 3745-51-24, or does not meet any of the listing descriptions in OAC 3745-51-31 to 3745-51-33. A note has been added to Table 4.13.3.3-1 of the Environmental Report clarifying the term "non-regulated wastes." Table 4.2.3.2-18 of the Environmental Report, revised in response to NRC Question 4-1, no longer contains the term "non-regulated."

Section 7 – Cost Benefit Analysis

Pursuant to 10 CFR 51.45c), the ER is required to consider the economic, technical, and other benefits and costs of the proposed action and alternatives.

- (A) Provide estimates of the average operating and maintenance costs per SWU for the following alternatives. Also indicate the source of these estimates.
 - 1.) No-action alternative (continued operation of the Paducah Gaseous Diffusion Plant (PGDP)), and
 - 2.) ACP located at Piketon (7 million SWU capacity).
- Appendix C of the ER provides estimates of construction costs of the ACP located at Piketon (as well as the alternative location at Paducah). However, it does not include estimates of operation and maintenance costs for the proposed action or the no-action alternative.

USEC Response

Response contains USEC Proprietary Information and is being transmitted under separate cover (AET 05-0018).

- (B) Provide references for studies/literature that discuss the comparative operating costs and/or relative resource consumption (coal/oil, water) of the gaseous diffusion and gas centrifuge technologies for uranium enrichment.
- Section 1.1 (page 1-10) of the ER states that gas centrifuge technology for uranium enrichment has lower operating costs than gaseous diffusion technology. It also states that energy costs for gas centrifuge technology are 5 percent of that for a comparably sized gaseous diffusion plant. However, no references are provided for these statements.

USEC Response

Response contains USEC Proprietary Information and is being transmitted under separate cover (AET 05-0018).

- (C) Provide cost estimates and timeframes for the decommissioning of the:
 - 1.) No-action alternative (continued operation of PGDP), and
 - 2.) ACP located at Piketon (7 million SWU capacity).
- Section 10.10 of the License Application provides an estimate of the decommissioning cost of the proposed action at the 3.5 million SWU capacity, but not the 7 million SWU capacity. Also, no estimate is given for the cost to decommission the PGDP.

USEC Response

Response contains USEC Proprietary Information and is being transmitted under separate cover (AET 05-0018).

- (D) Clarify whether the Portsmouth Gaseous Diffusion Plant would be decommissioned under either the no-action alternative or the proposed action. If yes, provide cost estimates and timeframes for its decommissioning.
- Neither the ER nor the License Application provide estimates of decommissioning costs for the Portsmouth Gaseous Diffusion Plant.

USEC Response

Response contains USEC Proprietary Information and is being transmitted under separate cover (AET 05-0018).

- (E) Provide details of the comparative waste generation rates from operation-phase activities for the no-action alternative (continued operation of PGDP) and the ACP located at Piketon.

Table 4.13.3.3.3-1 on page 4-125 of the ER lists projections of major waste types for the proposed action. Section 3.12, however, does not provide comparable detail for the no-action alternative. This information is necessary to facilitate a comparison of waste management costs. (Page 4-121 of the ER does indicate that DUF₆ tails from both types of facilities are expected to be equal for the same level of production.))

USEC Response

Response contains USEC Proprietary Information and is being transmitted under separate cover (AET 05-0018).